

Serial Number: 08/855,895
Inventor: David S. Stephens et al.
Att. Docket No. 26552.00028

5 at least one rapidly deployable air bag; and
6 a gas-generating system for rapid deployment of said air bag in response to
7 detection of the approach of said object in proximity to said person by said detection
8 system, wherein said detection system is a radar-based projectile detection system
9 operating at a frequency of 8-20 Ghz, and wherein said object is a ballistic projectile.

REMARKS

General

Reconsideration and allowance are respectfully requested in view of the foregoing amendments and the following remarks. Claims 1-31 are pending in this application. Claims 30-31 have been allowed by the Examiner, and the Applicant appreciates the Examiner's consideration in this regard. Claims 2-3, 9, 18-20, and 27 are objected to by the Examiner, but are allowable if rewritten in independent form. Finally, Claims 1, 4, 6-8, 17, and 25-26 stand rejected.

Claims 5, 10-16 and 21-24, and 28-29 have been withdrawn from consideration by the Examiner, and treated as an election without traverse. The Examiner is respectfully reminded that the Applicant has distinctly and specifically pointed out errors in the restriction requirement, and requested reconsideration. Further, the Examiner has not explained (1) the reasons why the inventions as claimed are independent or distinct, and (2) the reasons for insisting upon registration. MPEP §§ 808 and 816. Finally, the Examiner

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has not reconsidered the Applicant's traversal of the restriction requirement, as required. No reasons for finding the traversal to be non-persuasive have been given. MPEP §821.01. The Applicant maintains the right to petition the Commissioner from the requirement under 37 C.F.R. §1.144, prior to appeal. However, if the Examiner is disposed to allow the claims as amended, then the Applicant provisionally agrees to cancellation of Claims 5, 10-16, 21-24, and 28-29 by examiner's amendment, so that the case may pass to issue.

Rejections Based on § 102

The Examiner has rejected Claims 1, 4, 7, and 25-26 as being anticipated by Genovese under 35 U.S.C. 102(e), and, with the exception of Claim 7, by Cho. Claims 17 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Nitschke et al., and under 35 U.S.C. 102(b), by Caruso et al.

The Examiner asserts that Genovese and Cho disclose a reactive personnel protection system comprising an inflatable air bag, a gas generating system, deployment in response to proximate detection of a ballistic projectile, and a radar-based detection system. Further, the Examiner asserts that Nitschke et al. and Caruso et al. disclose a method of protecting personnel from the rapid approach of an object comprising detecting the approach of an object, discriminating the presence of the object vs. electronic noise, activating a gas-generation system in response to the presence of the object, and deployment of an air bag between the object and the personnel.

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With regard to the Examiner's argument that the objective of controlling the motion of explosively propelled objects can "only be met by deploying an air bag *after* detection of ballistic activity," the Applicant respectfully disagrees. This statement is not supported by any of the cited references. Indeed, it is also possible to affect and control ballistic motion by inflating air bags *prior* to detecting such motion.

While Genovese teaches the object of providing a "... rapid and effective damage-mitigating technique that may be used to control the motion of explosively propelled objects such as bullets ... and the like.", and that "... conventional sensor-controlled energizers that can detect motion, e.g., infrared sensors or Doppler radar sensors, are ideal for automatic operation.", Genovese does not teach how these two components may be combined to produce the Applicant's invention, which detects and responds to a specific kind of motion - that of a *ballistic* projectile. None of Genovese's drawings, or text, support operation other than by: bag inflation via manual operation [Col. 3, lines 49-50]; in response to a "predetermined action" (defined as deployment device deceleration) [Col. 4, lines 27-32]; via human-activated remote/radio control [Col. 4, lines 36-41; Col. 5, lines 1-4; and Col. 5, lines 14-16]; and automatically, via motion-detecting sensors (the *type* of motion detected by an automatic sensor is only defined in the context of manual/automatic monitoring of personnel entering a building) [Col. 4, lines 41-43 and Col. 5, lines 4-6, lines 24-25].

The Examiner is asked to consider representative statements made in Genovese, such as: "The general purpose of this invention is to provide *object-restraining*

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systems ...", Col. 1, lines 55-56; "... the present invention is directed to an *object-restraining method* that includes placing a plurality of expandable *restraining* elements in an area, *dispersing the elements in the area*, and then expanding the elements to *restrain objects located in the area ...*", Col. 1, line 65 - Col. 2, line 2; "... provide a rapidly deployable, *passive immobilization* restraint technique for effective use in *close quarters or confined areas*.", Col. 2, lines 23-25; "... an inflatable *confinement* device 21 ...", Col. 2, line 67; and illustrations which are directed only toward air bag expansion *within a confined area to immobilize personnel*. None of these statements, or the operational disclosures referenced above, teach a "ballistic projectile detection system", an "anti-ballistic air bag", and deployment of such an air bag, after detection by such a system, of a "ballistic projectile in proximity to said person" as claimed by the Applicant.

Similarly, as noted by the Examiner, Cho does not disclose detection of a ballistic projectile. Further, Cho does not disclose a ballistic projectile detection system, or use of an anti-ballistic air bag.

Claim 1 has been amended to include a *ballistic* projectile detection system and a gas generation system for rapid deployment of an *anti-ballistic* air bag in response to the approach of a *ballistic* projectile in proximity to personnel. As such, it is believed that the Examiner's objections regarding independent Claim 1, and dependent Claims 4 and 7, respecting the Genovese and Cho references, have been overcome. In addition, since new Claim 32 is a re-written version of Claims 25-27, as requested by the Examiner, it is believed

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that independent Claims 1 and 32, and dependent Claims 2-4 and 6-8 are in condition for allowance.

Since Claim 25 has been deleted, only the Examiner's arguments with respect to Claim 17, and the Nitschke et al. and Caruso et al. references, require a response. Claim 17 has been amended to address a method which includes the step of detecting and discriminating the approach and presence of a "ballistic object" in "proximity to said personnel," and deployment of an "anti-ballistic air bag ...".

Nitschke et al. teaches accelerometer instrumentation and detection of motion for a vehicle, which the Examiner has likened to the "object" claimed by the Applicant. However, it is impractical to instrument a "ballistic object" to detect its approach, and thus, the Nitschke reference does not anticipate detection and discrimination of approaching *ballistic* objects. Similarly, Caruso et al. teaches detection of "object" motion by detecting the acceleration of the object. However, Caruso et al. fails to disclose detection of approaching ballistic objects in proximity to personnel, as claimed by the Applicant.

Since neither Nitschke et al. nor Caruso et al. disclose "detecting the approach of a ballistic object in proximity to said personnel," and since it would be harmful (i.e., counter-intuitive) to deploy an "anti-ballistic air bag" in the situations described by Nitschke et al. and Caruso et al., as claimed by the applicant, it is believed that the Examiner's objections have been overcome. Therefore, independent Claim 17, and independent Claim

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18, as amended, should be in condition for allowance. Dependent Claims 19-20 should also now be in condition for allowance.

Rejections Based on § 103

The Examiner has rejected Claims 6 and 8 as being unpatentable over Genovese in view of Khandhadia et al. under 35 U.S.C. 103(a). As noted above, Genovese fails to disclose a "ballistic projectile detection system", an "anti-ballistic air bag", and deployment of such an air bag, after detection by such a system, of a "ballistic projectile in proximity to said person" as claimed by the Applicant. Khandhadia et al., which the Examiner notes is only relied upon for teaching the substitution of certain kinds of air bag material, also fails to teach these elements of the Applicant's invention.

Further, even if the teachings of Genovese are combined with those of Khandhadia et al., there is no suggestion in either reference to construct an "anti-ballistic polyethylene," or an "anti-ballistic aramid fiber material" air bag, as claimed. Therefore, Claims 6 and 8, which depend from Claim 1, should be in condition for allowance. Dependent Claims 7 and 9 should also now be in condition for allowance.

CONCLUSION

In view of the limitations set forth in the above amendments to Claims 1, 17, and 18, the Applicant requests the Examiner to enter the claims as amended and allow this application to issue as a United States patent. Claims 2-4 and 6-9 depend from independent

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Claim 1, and therefore, should be allowable if the base claim is allowed. Claims 18-20 depend from independent Claim 17, and therefore, should be allowable if the base claim is allowed. Finally, Claims 30-31 have already been allowed by the Examiner, and Claim 32 should be in condition for allowance, since it is based on a re-written version of Claim 27, as suggested by the Examiner. If the Examiner believes further limitations or changes are necessary to support allowance, a telephone conference is earnestly solicited. However, if the Examiner finds the claims are not allowable, and does not believe that they can be changed to be allowed, then this Amendment should be entered into the record for purposes of appeal. The Examiner should note that the Applicant has filed, concurrently with this amendment, a Notice of Appeal to the Board of Patent Appeals and Interferences. Any deficiency in fees may be corrected by charging deposit account number 10-0447 directly.

Respectfully submitted,
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